

U.S.S.N. 09/955, 512

20. (original) A method for automatically adjusting the height of a loadport according to claim 11 further comprising the step of measuring a height of the platform by an ultrasonic sensor.

REMARKS

Thorough examination and careful review of the application by the Examiner is noted and appreciated.

Claims 1-3, 5, 7-12, 14-17, 19 and 20 are pending in the application. Claims 1-3, 5, 7-12, 14-17, 19 and 20 stand rejected.

Claim Rejections Under 35 USC §103

Claims 1-3, 5, 9, 11-12, 15 and 17 are rejected under 35 USC §103(a) as being unpatentable over Cheng in view of Ohntrup '470. It is contended that Cheng teaches substantially the present invention apparatus except that how the platform is controlled, and such is taught by Ohntrup in a load handling platform that moves up and down to deliver containers using a distance sensor L mounted on a bottom surface of the movable platform for measuring a height of the movable platform.

The rejection of claims 1-3, 5, 9, 11-12, 15 and 17 under 35 USC §103(a) based on Cheng and Ohntrup is respectfully traversed.

U.S.S.N. 09/955, 512

The present invention teaches a loadport of a semiconductor fabrication equipment for receiving a wafer cassette and more particularly, relates to a **loadport** for a semiconductor fabrication equipment that is **equipped with automatic height adjustment means** capable of maintaining the loadport at a predetermined height and a method for operating the loadport. As clearly recited in independent claim 1:

“Claim 1. A loadport equipped with automatic height adjustment means comprising:

- a movable platform adapted for ...;
- at least two support members for supporting ... and for moving said platform ...;
- a distance sensor mounted ...; and
- a **process controller** for **receiving** a first signal from said distance sensor, **comparing** to a pre-stored datum and then **sending** a second signal to said at least two support members to move said movable platform until said **first signal equals said pre-stored datum.**”

Two major elements are thus taught and claimed by the present invention; first, a **movable platform (or loadport)** for a semiconductor fabrication equipment. Secondly, a **closed-loop feed back control system** including a process controller for receiving a first signal from the distance sensor, **comparing** to a pre-stored datum and then **sending** a second signal to the at least two support members to move the movable platform until the first signal equals the pre-stored datum.

U.S.S.N. 09/955, 512

While the Applicants respectfully agree with the Examiner that Cheng does not teach distance sensors to control a vertical drive for a loadport, the Applicants further respectfully submit that **neither one of the two references teaches a closed-loop feed back control system** for the positioning of a loadport of a fabrication equipment. In other words, neither reference teaches a process controller for receiving a first signal from the distance sensor, comparing to a pre-stored datum and sending a second signal to the at least two support members to move the movable platform until the first signal equals the pre-stored datum.

Ohntrup, contrary to the Examiner's contention that teaches a distance sensor mounted on a bottom surface of a movable platform for measuring a height of the movable platform, teaches instead in Figs. 2B and 3, and col. 3, lines 40-47, teaches the sending of a light beam in a horizontal direction for measuring the distance between the tip of the fork blade 15 and the load container C. For instance, at col. 3, lines 40 plus:

"As is well illustrated in Fig. 2A, this beam will be generally between the two lines 28 and 29 extending from the casing L to the load ... The light reflected back from the cartons C, should be received by light sensitive means as closely aligned to the light source as is possible".

The Ohntrup device, as shown in Figure 3, is a light means (column 3, line 19) that is mounted in a casing, or mounted in the front surface of the casing as clearly shown in Figure 3. The Ohntrup light means device is not mounted in a bottom surface of the loader blade, as taught by the present invention and claimed in the present invention independent Claim 1:

U.S.S.N. 09/955, 512

“a distance sensor mounted on a bottom surface of said movable platform for measuring a height of said movable platform;”

The light means device taught by Ohntrup, when mounted in the front surface of the loader blade, is impossible to measure a height of the blade. Instead, the Ohntrup light means device is used to measure a horizontal distance between the tip of the blade.

Moreover, the controller, or the control box means 44 (column 6, line 20) taught by Ohntrup does not perform the same function as that taught by the present invention. As Ohntrup stated at column 6, lines 20 plus:

“... control box 44 means in the form of a standard stepping relay or the like which is actuated by dial D to override the means for interrupting the power flow between terminals 48 and 49 until a pre-selected number of differentials in voltage drop between control terminals 46 and 47 occur.”

Contrary to the Ohntrup controller, the present invention controller, as clearly recited in independent Claim 1, performs the function of:

“...for receiving a first signal from said distance sensor, comparing to a pre-stored datum and then sending a second signal to said at least two support members to move said moveable platform until said first signal equals said pre-stored datum.”

U.S.S.N. 09/955,512

The Ohntrup controller and the present invention controller are therefore completely different, and that Ohntrup does not teach the present invention controller.

The Applicants respectfully submit that the references of Cheng and Ohntrup, even when combined, do not teach the present invention **loadport** that is equipped with a **closed-loop feed back control system** as clearly recited in independent claims 1 and 11. The rejection of Applicant's claims 1-3, 5, 9, 11-12, 15 and 17 is respectfully traversed.

Claims 7, 8, 10, 14, 16, 19 and 20 are rejected under 35 USC §103(a) as being unpatentable over Cheng, Ohntrup and further in view of Schauer '281. It is contended that while Cheng modified by Ohntrup does not teach a sensor is not on or adjacent a top surface of the platform, Schauer teaches a leveling sensor on top of a platform enclosure.

The rejection of claims 7, 8, 10, 14, 16, 19 and 20 under 35 USC §103(a) based on Cheng, Ohntrup and Schauer is respectfully traversed.

Claims 7, 8 and 10 depend on independent claim 1, while claims 14, 16, 19 and 20 depend on independent claim 11. The Applicants have clearly shown previously that both independent claims 1 and 11 recites the limitation of "a distance sensor **mounted on a bottom surface** of said movable platform for measuring a height of said movable platform" or "mounting a distance sensor **on a bottom surface** of said movable platform for measuring a height of the platform", which are clearly not taught or disclosed by Cheng, Ohntrup or Schauer, either singularly or in combination thereof. The Applicants further submit that Schauer does not disclose such a distance sensor for measuring the height of a platform.

U.S.S.N. 09/955, 512

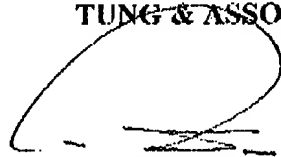
The rejection of claims 7, 8, 10, 14, 16, 19 and 20 under 35 USC §103(a) based on Cheng, Ohntrup and Schauer is respectfully traversed. A reconsideration for allowance of these claims is respectfully requested of the Examiner.

Based on the foregoing, the Applicants respectfully submit that all of the pending claims, i.e. claims 1-3, 5, 7-12, 14-17 and 19-20, are now in condition for allowance. Such favorable action by the Examiner at an early date is respectfully solicited.

In the event that the present invention is not in a condition for allowance for any other reasons, the Examiner is respectfully invited to call the Applicants' representative at his Bloomfield Hills, Michigan office at (248) 540-4040 such that necessary action may be taken to place the application in a condition for allowance.

Respectfully submitted,

TUNG & ASSOCIATES



Randy W. Tung
Reg. No. 31,311
Telephone: (248) 540-4040